18. (Twice Amended) A camera control apparatus comprising:

a display device that displays an image sensed by a camera, in accordance with an image signal output from the camera;

a detection device that detects a figure scripted on a display screen on which the image is being displayed by said display device;

a selection device that collates a pattern of the figure detected by said detection device with figure patterns previously stored in a storage device, and selects a command to control a predetermined function of the camera in accordance with a figure pattern which corresponds to the detected figure; and

an output device that outputs the command.

19. (Amended) A camera control apparatus according to Claim 18 wherein said detection device further detects an action of scripting a figure on the display surface of said display device.

20. (Amended) A camera control apparatus according to Claim 19 wherein said output device outputs a control command for at least one of pan control, tilt control, and zoom control of the camera.

21. (Amended) A camera control apparatus according to Claim 18 wherein said output device outputs a control command for at least one of pan control, tilt control, and zoom control of the camera.

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22. (Amended) A camera control apparatus according to Claim 21, wherein if said detection device detects an action of scripting a line segment from right to left on the display screen, then said output device outputs a control command for leftward pan control of the camera according to the length of the line segment.

23. (Amended) A camera control apparatus according to Claim 21, wherein if said detection device detects an action of scripting a line segment from left to right on the display screen, then said output device outputs a control command for rightward pan control of the camera according to the length of the line segment.

24. (Amended) A camera control apparatus according to Claim 21 wherein if said detection device detects an action of scripting a line segment along the direction from the bottom to the top of the display screen, then said output device outputs a control command for upward tilt control of the camera according to the length of the line segment.

25. (Amended) A camera control apparatus according to Claim 21 wherein if said detection device detects an action of scripting a line segment along the direction from the top to the bottom of the display screen , then said output device outputs a control command for downward tilt control of the camera according to the length of the line segment.

26. (Amended) A camera control apparatus according to Claim 21, wherein if said detection device detects a scripting of an arrow on the display screen, then said output device outputs a control command for control of at least one of pan and tilt of the camera according to the direction of the detected arrow.

27. (Amended) A camera control apparatus according to Claim 26, wherein said output device determines a controlled amount of at least one of the pan and tilt of the camera according to a length of the detected arrow.

28. (Amended) A camera control apparatus according to Claim 21, wherein if said detection device detects a substantially circular figure is scripted on the display screen, then said output device outputs a command for controlling the zoom ratio according to a size of the substantially circular figure detected.

29. (Amended) A camera control apparatus according to Claim 28, wherein if said detection device detects a substantially circular figure is scripted on the display screen, then said output device further outputs a control command for performing at least one of pan and tilt of the camera such that an image displayed at a center of the substantially circular figure is positioned at a center of the display screen.

30. (Amended) A camera control apparatus according to Claim 21, wherein if said detection device detects a substantially rectangular figure is scripted on the

display screen, then said output means outputs a command for controlling the zoom ratio according to a size of the substantially rectangular figure detected.

31. (Amended) A camera control apparatus according to Claim 30, wherein if said detection device detects a substantially rectangular figure is scripted on the display screen, then said output device further outputs a control command for performing at least one of pan and tilt of the camera such that an image displayed at a center of the substantially rectangular figure is positioned at a center of the display screen.

32. (Amended) A camera control apparatus according to Claim 21, wherein if said detection device detects a crisscross figure is scripted on the display screen, then said output device outputs a control command for controlling a zoom ratio in the zoom-out direction according to a size of the crisscross figure detected.

33. (Amended) A camera control apparatus according to Claim 32, wherein said output device outputs a control command for performing at least one of pan and tilt of the camera such that an image displayed at a point of intersection of two line segments forming the crisscross figure is positioned at the center of the display screen.

34. (Amended) A camera control apparatus according to Claim 21, wherein if said detection device detects a line is scripted so as to form one loop on the display screen, then said output means outputs a control command for terminating control of the camera.

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35. (Twice Amended) A method of controlling a camera control system comprising:

a detection step of detecting a figure scripted on a display screen on which an image formed by a camera is being displayed;

a selection step of collating a pattern of a figure detected in said detecting step with figure patterns previously stored in a storage device, and selecting a command to control a predetermined function of the camera in accordance with a figure pattern corresponding to the detected figure; and

an output step of outputting the selected command.

36. (Amended) A method according to Claim 35, further comprising a display step of displaying on the display screen the image formed by the camera on the basis of an image signal output from the camera.

37. A method according to Claim 36, further comprising a control step of controlling the camera on the basis of the camera control command output in said output step.

38. (Amended) A method according to Claim 37, wherein said detection step comprises detecting an action of scripting a figure on the display screen in said display step.

39.   A method according to Claim 38, wherein said output step comprises outputting a control command for at least one of pan control, tilt control, and zoom control of the camera.

40.   A method according to Claim 37, wherein said output step comprises outputting a control command for at least one of pan control, tilt control, and zoom control of the camera.

41.   (Amended) A method according to Claim 40, wherein said detecting step includes detecting an action of scripting a line segment from right to left on the display screen, and said output step includes outputting {then] a control command for leftward pan control of the camera in accordance with the length of the line segment detected in said detecting step.

42.   (Amended) A method according to Claim 40, wherein said detecting step includes detecting an action of scripting a line segment from left to right on the display screen, and said output step includes outputting a control command for rightward pan control of the camera in accordance with the length of the line segment detected in said detecting step.

43.   (Amended) A method according to Claim 40, wherein said detecting step includes detecting an action of scripting a line segment along the direction from the bottom to the top of the display screen, and said output step includes outputting a

control command for upward tilt control of the camera in accordance with the length of the line segment detected in said detecting step.

44.   (Amended) A method according to Claim 40, wherein said detecting step includes detecting an action of scripting a line segment along the direction from the top to the bottom of the display screen, and said output step includes outputting a control command for downward tilt control of the camera in accordance with the length of the line segment detected in said detecting step.

45.   (Amended) A method according to Claim 40, wherein said detecting step includes detecting a scripting of an arrow on the display screen, and said output step includes outputting a control command for control of at least one of pan and tilt of the camera in accordance with the direction of the arrow detected in said detecting step.

46.   (Amended) A method according to Claim 45, wherein said output step includes determining a controlled amount of at least one of the pan and tilt of the camera in accordance with the length of the arrow detected in said detecting step.

47.   (Amended) A method according to Claim 40, wherein said detecting step includes detecting scripting of a substantially circular figure on the display screen, and said output step includes outputting a command for controlling the zoom ratio in accordance with the size of the substantially circular figure detected in said detecting step.

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48. (Amended) A method according to Claim 47, wherein said detecting step includes detecting scripting of a substantially circular figure on the display screen, and said output step includes outputting a control command for performing at least one of pan and tilt of the camera so that an image displayed at a center of the substantially circular figure detected in said detecting step is positioned at a center of the display screen.

49. (Amended) A method according to Claim 40, wherein said detecting step includes detecting scripting of a substantially rectangular figure on the display screen, and said output step includes outputting a command for controlling the zoom ratio in accordance with a size of the substantially rectangular figure detected in said detecting step.

50. (Amended) A method according to Claim 49, wherein said detecting step includes detecting scripting of a substantially rectangular figure on the display screen, and said output step includes outputting a control command for performing at least one of pan and tilt of the camera such that an image displayed at a center of the substantially rectangular figure detected in said detecting step is positioned at a center of the display surface.

51. (Amended) A method according to Claim 40, wherein said detecting step includes detecting scripting of a crisscross figure on the display screen, and said output step includes outputting a control command for controlling the zoom ratio in

the zoom-out direction in accordance with the size of the crisscross figure detected in said detecting step.

52. (Amended) A method according to Claim 51, wherein said output step includes outputting a control command to perform at least one of pan and tilt of the camera such that an image displayed at the point of intersection of two line segments forming the crisscross figure is positioned at the center of the display screen.

53. (Amended) A method according to Claim 40, wherein said detecting step includes detecting an action of scripting a line so as to form one loop on the display screen, and said output step includes outputting a control command for terminating control of the camera in response to detection of a scripted loop in the detecting step.

54. (Twice Amended) A storage medium storing a computer executable program for controlling a camera control apparatus, the stored program including computer executable code for causing the apparatus to perform the following functions:

displaying an image formed by a camera, in accordance with an image signal output from the camera;

detecting a figure scripted on a display screen on which the image is being displayed;

collating a pattern of the detected figure with figure patterns previously stored in a storage device;

selecting a command to control a predetermined function of the camera in accordance with a figure pattern which corresponds to the detected figure; and

outputting the selected command.

55.   (Amended) A storage medium according to Claim 54, wherein the stored program includes computer executable code for causing the camera control apparatus to detect an action of scripting a figure on the display screen.

56.   (Amended) A storage medium according to Claim 55, wherein the stored program includes computer executable code for causing the camera control apparatus to output a control command for at least one of pan control, tilt control, and zoom control of the camera.

57.   (Amended) A storage medium according to Claim 54, wherein the stored program includes computer executable code for causing the camera control apparatus to output a control command for at least one of pan control, tilt control, and zoom control of the camera.

58.   (Amended) A storage medium according to Claim 57, wherein the stored program includes computer executable code for causing the camera control apparatus to detect an action of scripting a line segment from right to left on the display screen, and output a control command for leftward pan control of the camera in accordance with the length of the detected line segment.

59.   (Amended) A storage medium according to Claim 57, wherein the stored program includes computer executable code for causing the camera control apparatus to detect an action of scripting a line segment from left to right on the display screen, and to output a control command for rightward pan control of the camera in accordance with the length of the detected line segment.

60.   (Amended) A storage medium according to Claim 57, wherein the stored program includes computer executable code for causing the camera control apparatus to detect an action of scripting a line segment along the direction from the bottom to the top of the display screen, and to output a control command for upward tilt control of the camera in accordance with the length of the detected line segment.

61.   (Amended) A storage medium according to Claim 57, wherein the stored program includes computer executable code for causing the camera control apparatus to detect an action of scripting a line segment along the direction from the top to the bottom of the display screen, and to output a control command for downward tilt control of the camera in accordance with the length of the detected line segment.

62.   (Amended) A storage medium according to Claim 57, wherein the stored program includes computer executable code for causing the camera control apparatus to detect a scripting of an arrow on the display screen, and to output a control command for control of at least one of pan and tilt of the camera in accordance with the direction of the detected arrow.

63. (Amended) A storage medium according to Claim 62, wherein the stored program includes computer executable code for causing the camera control apparatus to determine a controlled amount of at least one of the pan and tilt of the camera in accordance with the length of the detected arrow.

64. (Amended) A storage medium according to Claim 57, wherein the stored program includes computer executable code for causing the camera control apparatus to detect a scripting of a substantially circular figure on the display screen, and to output a command for controlling the zoom ratio in accordance with the size of the substantially circular figure detected.

65. (Amended) A storage medium according to Claim 64, wherein the stored program includes computer executable code for causing the camera control apparatus to detect a scripting of a substantially circular figure on the display screen, and to output a control command for performing at least one of pan and tilt of the camera such that an image displayed at a center of the substantially circular figure is positioned at a center of the display screen.

66. (Amended) A storage medium according to Claim 57, wherein the stored program includes computer executable code for causing the camera control apparatus to detect a scripting of a substantially rectangular figure on the display screen, and to output a command for controlling the zoom ratio in accordance with the size of the substantially rectangular figure detected.

67.   (Amended) A storage medium according to Claim 66, wherein the stored program includes computer executable code for causing the camera control apparatus to detect a scripting of a substantially rectangular figure on the display screen, and to output a control command for performing at least one of pan and tilt of the camera such that an image displayed at a center of the substantially rectangular figure is positioned at a center of the display screen.

68.   (Amended) A storage medium according to Claim 57, wherein the stored program includes computer executable code for causing the camera control apparatus to detect a scripting of a crisscross figure on the display screen, and to output a control command for controlling the zoom ratio in the zoom-out direction in accordance with a size of the crisscross figure detected.

69.   (Amended) A storage medium according to Claim 68, wherein the stored program includes computer executable code for causing the camera control apparatus to output a control command to perform at least one of pan and tilt of the camera such that an image displayed at a point of intersection of two line segments forming the crisscross figure is positioned at the center of the display screen.

70.   (Amended) A storage medium according to Claim 57, wherein the stored program includes computer executable code for causing the camera control apparatus to detect a scripting of a line that forms one loop on the display screen, and to

output a control command for terminating control of the camera in response to the detection.

<div align="center">REMARKS</div>

The present Preliminary Amendment is being filed together with a Request for Continued Examination.

Claims 1 to 70 now are presented for examination. Claims 18, 35 and 54 are independent. Claims 1 to 17 have been cancelled. Claims 18, 35 and 54 have been amended.

Applicants are in receipt of an Official Action dated September 20, 2002. Claims 18 through 21, 35 through 40, and 54 through 57 have been rejected under 35 U.S.C. § 103, over U.S. Patent No. 5,523,783 (Cho) in view of U.S. Patent No. 5,396,287 (Cho). Claims 26, 27, 30-33, 45, 46, 49-52, 62, 63 and 66 to 69 have been rejected under 35 U.S.C. § 103, over the '783 Cho patent, in view of the Cho '287 patent, further in view of U.S. Patent No. 5,568,183 (Cortjens). Claims 22 to 25, 41-44 and 58-61 have been rejected under 35 U.S.C. § 103, over the Cho '783 patent in view of the Cho '287 patent, further in view of Japanese Laid-Open Patent Application No. 4-302587 ("JP '587"). Reconsideration and withdrawal of the rejections respectfully are requested in view of the above amendments and the following remarks.

The rejections of the claims over the cited art respectfully are traversed. Nevertheless, without conceding the propriety of the rejections, Claims 1 to 1 have been canceled herein, and Claims 18, 35 and 54 have been amended even more clearly to recite

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various novel features of the present invention. Support for the proposed amendments may be found in the original application. No new matter has been added.

Independent Claims 18, 35 and 54, as amended, relate to a camera control arrangement in which a figure scripted on a display screen on which an image formed by a camera is being displayed is detected. A pattern of the detected figure is collated with figure patterns previously stored in a storage device. A command is selected to control a predetermined function of the camera according to the figure pattern corresponding to the detected figure and the selected command is output.

Applicants submit that the prior art fails to anticipate the present invention. Moreover, Applicants submit that there are differences between the subject matter sought to be patented and the prior art, such that the subject matter taken as a whole would not have been obvious to one of ordinary skill in the art at the time the invention was made.

In Applicants' view, Cho '783 discloses a pan head control system that automatically pans and tilts a TV camera so that the aim of the TV camera is moved along a desired path on an object. In the pan head control system, a pan head supports a TV camera and is provided with a driving mechanism which drives the pan head to pan and/or tilt the TV camera under the control of a controller. A monitor TV is connected to the TV camera and projects an image taken by the TV camera on a screen. A plurality of points on the object through which the aim of the TV camera is to be passed are designated by touching a light pen at the images of the points on the image of the object projected on the screen of the monitor TV. The coordinates of the designated points on the screen are determined, stored and displayed on the screen of the monitor TV. A continuous trajectory line is plotted by properly joining the designated points on the screen of the monitor TV.

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Data on a plurality of points on the trajectory line are stored at predetermined intervals, and read out in order. The controller controls the driving mechanism to pan and tilt the TV camera so that the images of the points represented by the data read out are positioned at the center of the screen in order.

In Applicants' opinion, Cho '287 discloses a TV camera work control apparatus using a tripod head to accurately select plural given shooting positions and conditions. A transparent touch panel divided into plural touch inputting portions is used to control the position and the shooting operation of a TV camera. The touch panel is disposed on a monitor screen. When a shooting position is selected by pressing one of the divided touch inputting portions, a shooting operation such as panning, tilting, zooming and focusing is controlled. The zooming operation may be controlled by the magnification which is proportional to the pressure applied to the touch inputting portion or the time for which the touch inputting portion is pressed. It is possible to correct the current operation parameters with reference to the preceding operating state, when a signal is input again from one of the touch inputting portions. It also is possible to automatically set the operation parameters for the touch inputting portions of the touch panel by inputting the operation parameters, e.g., for the two ends of a diagonal of the touch panel.

According to the invention defined in Claims 18, 35 and 54, as amended, a figure scripted on a display screen is detected and the pattern of the detected figure is collated with figure patterns previously stored in a storage device to select a command to control a predetermined function of the camera according to the figure pattern corresponding to the detected figure.

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Cho '783 may teach use of a light pen to touch plural points on the image of an object displayed on a screen obtained from a TV camera. As disclosed in Cho '783 in the abstract and at lines 4 through 43 of column 2, a continuous trajectory line is plotted from the plural points and data of the points are stored and read out in order. A driving mechanism is controlled to pan and tilt the TV camera so that images of the points represented by the read out data are positioned at the center of the screen in order. Cho '783, however, fails to disclose or suggest the feature of storing a plurality of figure patterns and, as recognized by the Examiner, Cho '783 differs from Claims 18, 35 and 54 in not teaching a selection device that collates a pattern of a detected figure with previously stored figure patterns.

Cho '287 may teach a touch screen divided into inputting portions, each having a shot number. As disclosed at lines 54 through 57 of column 4 of Cho '287, "The RAM 20 stores the parameters for the shooting operations of panning, tilting, zooming (magnification) and focusing in correspondence with the shot number of each touch inputting portion 12", and at lines 10 through 22 of column 5 with respect to Fig. 3 "the selected shot position at the touch inputting portion is converted into the corresponding shot number, and the parameters representing the information on panning, tilting, zooming and focusing are read out of the RAM 20 in correspondence with the shot number. At subsequent step 104, the control signals based on the information on panning and tilting are supplied to the tripod head driving portion 23, and the control signals based on the information on zooming and focusing are supplied to the lens driving portion 24. The shooting operation is executed in accordance with these control signals." Accordingly, panning, tilting, zooming and focusing parameters are selected according to shot position

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are stored in RAM 20 and panning, tilting, zooming and focusing signals are read out for camera control.

It is further disclosed at lines 31 through 40 of column 6 with respect to Fig. 6 that "[a] parameter calculator 19 is provided in the CPU 18. The parameter calculator 19 can calculate the operation parameters for the entire region from two values for at least two operation parameters, namely, two values for panning and tilting and two values for zooming (magnification) and focusing, respectively. The RAM 20 stores the parameters for each shooting operation in correspondence with the shot number of each touch inputting portion 12. When the operation parameters are calculated by the parameter calculator 19, the calculated parameters are stored in the RAM 20." As a result, Cho '287 is restricted to an arrangement where panning, tilting, zooming and focusing representative parameters are stored for each shot position of a touch inputting portion or for an entire region of the touch inputting portion and are read out as addressed by shot position.

The Cho '287 disclosure, however, fails to disclose or suggest at least the features of storing figure patterns in a storage device, detecting a figure scripted on a display screen or of collating the detected figure with the stored figure patterns to select a command that controls a predetermined camera function for the figure pattern that corresponds to the detected figure as in Claims 18, 35 and 54. Rather than addressing stored figure patterns in a storage device to select a command, Cho '287 requires that panning, tilting, zooming and focusing parameters stored in a RAM 20 be addressed by shot position for read out of panning, tilting, zooming and focusing signals to be sent to a camera. Accordingly, Cho '287 is not understood in any manner to suggest panning, tilting, zooming and focusing parameters that correspond to each of stored figure patterns, as

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recited in Claims 18, 35 and 54. Further, according to the invention of Claims 18, 35 and 54, the same command is output for a detected scripted figure independent of the part of the display screen at which a scripted figure is put. In contrast, Cho '287 fails in any manner to suggest stored figure patterns or scripted figures, and to output a command based solely on the touched position selected on the touch panel 11.

With regard to the cited combination, Cho '783 is devoid of any suggestion of the use of scripted figure collation with stored figure patterns for camera control. Cho '287 only teaches storing panning, tilting, zooming and focusing parameters in a RAM 20 as addressed by shot position so that panning, tilting, zooming and focusing signals to be sent to a camera can be output according to shot positions on a touch screen; Cho '287 fails to suggest anything about collation of a detected scripted figure with stored figure patterns. As a result, it is not seen that the addition of Cho '287's shot position addressed panning, tilting, zooming and focusing parameters without any suggestion of stored figure patterns or scripted figures to Cho '287 teaching of the use of a light pen to touch plural points on the image of an object displayed on a screen obtained from a TV camera centering could possibly suggest the features of Claims 18, 35 and 54 of collating a pattern of a detected scripted figure with previously stored figure patterns to select a command for control of a predetermined function of the camera as in Claims 18, 35 and 54. It is therefore believed that Claims 18, 35 and 54 are completely distinguished from any combination of Cho '783 and Cho '287 and are allowable.

A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as

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references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

Applicants' attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,

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